

Amendments to the Claims

A detailed list of all claims under examination is set out below. Please amend claims 12, 25, 28, 32, 34 and 35 as shown below:

1. (previously presented): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin comprises between 50 and 75 weight percent isophthalic acid based on the total weight of resin and has a glass transition temperature of at least about 35 °C; and

wherein the flexibility of the coated substrate is at least 1T with no tape off.

2. (original): The coated substrate of claim 1, wherein the coating composition further comprises an adjuvant selected from the group consisting of: pigment, flow modifiers, viscosity modifiers, or combinations thereof.

3. (cancelled).

4. (previously presented): The coated substrate of claim 1, wherein the aromatic dicarboxylic acid component is greater than 85 weight percent based on the total weight of acid.

5. (cancelled).

6. (original): The coated substrate of claim 1, wherein the symmetric diol amount is greater than 60 weight percent based on the total weight of polyols and the asymmetric diol amount is greater than 25 weight percent based on the total weight of polyols.

7. (original): The coated substrate of claim 1, wherein the symmetric diol amount is greater than 65 weight percent based on the total weight of polyols and the asymmetric diol amount is greater than 30 weight percent based on the total weight of polyols.

8. (original): The coated substrate of claim 1, wherein the symmetric diol comprises ethylene glycol, diethylene glycol, triethylene glycol, dipropylene glycol, 1,3-propanediol, neopentyl glycol, cyclohexane dimethanol, hydroxypivalyl hydroxypivalate, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, or combination thereof.

9. (previously presented): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin comprises between about 50 and 75 weight percent isophthalic acid based on the total weight of resin and has a glass transition temperature of at least about 35 °C;

wherein the symmetric diol includes both 1,3-propanediol and neopentyl glycol; and wherein the flexibility of the coated substrate is at least 1T with no tape off.

10. (previously presented): The coated substrate of claim 1, wherein the asymmetric diol comprises 1,2-propylene glycol, 2-methyl-1,3-propanediol, 2-butyl-2-ethyl-1,3-propanediol, 1,2-butanediol, 1,3-butanediol, 1,2-pentanediol, 1,3-pentanediol, 1,4-pentanediol, 2,2-dimethyl-1,3-hexanediol, 2-methyl-2,4-pentanediol, 2,2,4-trimethyl-1-3-pentanediol, or combination thereof.

11. (previously presented): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin comprises between about 50 and 75 weight percent isophthalic acid based on the total weight of resin and has a glass transition temperature of at least about 35 °C;

wherein the asymmetric diol comprises 2-methyl-1,3-propanediol; and

wherein the flexibility of the coated substrate is at least 1T with no tape off.

12. (currently amended): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin comprises between about 50 and 75 weight percent isophthalic acid based on the total weight of resin and has a glass transition temperature of at least about 35 °C;

wherein the polyester resin comprises between about ~~20 and 45~~ 15 and 40 weight percent 1,3-propanediol, between about ~~15 and 40~~ 20 and 45 weight percent 2-methyl-1,3-propanediol, and between about 25 and 50 weight percent neopentyl glycol based on the total weight of polyols; and

wherein the flexibility of the coated substrate is at least 1T with no tape off.

13. (original): The coated substrate of claim 1, wherein the binder further comprises a crosslinking agent.

14. (original): The coated substrate of claim 13, wherein the crosslinking agent comprises a melamine formaldehyde resin.
15. (original): The coated substrate of claim 1, wherein the glass transition temperature of the polyester resin is at least about 40 °C.
16. (original): The coated substrate of claim 1, wherein the number average molecular weight of the polyester resin is between about 2,500 and 5,000.
17. (original): The coated substrate of claim 1, wherein the binder comprises a blend of an aromatic solvent and propylene glycol monomethyl ether acetate.
18. (original): The coated substrate of claim 1, wherein the hydroxyl number of the polyester resin is between about 20 and 50.
19. (original): The coated substrate of claim 1, wherein the coating has a flexibility of 0T with no tape off, and a hardness of at least H.
20. (previously presented): The coated substrate of claim 1, wherein the coating composition when formulated to an initial white color and exposed outdoors in South Florida for 17 months at a 45 degree angle facing south, has an L value color change less than about 3 units compared to an unexposed panel.

21. (previously presented): A method of coating and fabricating a coil, comprising:
 providing a coating composition, wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, and optionally a crosslinker, wherein the polyester resin comprises between 50 and 75 weight percent isophthalic acid based on the total weight of resin and has a glass transition temperature of at least about 35 °C;

applying the coating composition onto at least one major surface of a substrate coil;
 and

hardening the coating composition;

wherein the flexibility of the coated substrate is at least 1T with no tape off.

22. (previously presented): The method of claim 21, further comprising forming the coated substrate coil into bent parts, wherein the hardened coating has a hardness of at least H.

23. (previously presented): A coating composition, comprising:

a binder, wherein the binder comprises a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, and optionally a crosslinker, wherein the polyester resin comprises between 50 and 75 weight percent isophthalic acid based on the total weight of binder and wherein the coating composition is storage stable, has a glass transition temperature of at least about 35 °C and when applied to a coil and hardened will have a flexibility of at least 1T with no tape off.

24. (previously presented): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin has a glass transition temperature of at least about 35 °C;

wherein the symmetric diol includes both 1,3-propanediol and neopentyl glycol; and wherein the flexibility of the coated substrate is at least 1T with no tape off.

25. (currently amended): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, wherein the polyester resin has a glass transition temperature of at least about 35 °C and comprises between about ~~20 and 45~~ 15 and 40 weight percent 1,3-propanediol, between about ~~45 and 40~~ 20 and 45 weight percent 2-methyl-1,3-propanediol, and between about 25 and 50 weight percent neopentyl glycol based on the total weight of polyols; and

wherein the flexibility of the coated substrate is at least 1T with no tape off.

26. (previously presented): A coated substrate, comprising: a substrate coil, and a coating composition applied to at least one major surface of the substrate coil,

wherein the coating composition comprises a binder comprising a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 25 weight percent based on the total weight of polyols, wherein the aromatic dicarboxylic acid comprises isophthalic acid, the isophthalic acid is greater than 85 weight percent based on the total weight of acids and the polyester resin has a glass transition temperature of at least about 35 °C; and

wherein the flexibility of the coated substrate is at least 1T with no tape off.

27. (previously presented): The coating composition of claim 23, wherein the aromatic dicarboxylic acid component is greater than about 85 weight percent based on the total weight of acid.

28. (currently amended): ~~The coating~~ A coating composition of claim 27, comprising:
a binder, wherein the binder comprises a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, and optionally a crosslinker, wherein the polyester resin comprises between 50 and 75 weight percent isophthalic acid based on the total weight of binder and wherein the coating composition is storage stable, has a glass transition temperature of at least about 35 °C and when applied to a coil and hardened will have a flexibility of at least 1T with no tape off, and
wherein the aromatic dicarboxylic acid component is greater than about 85 weight percent based on the total weight of acid, the symmetric diol comprises 1,3-propanediol and the asymmetric diol comprises 2-methyl-1,3-propanediol.

29. (previously presented): The coating composition of claim 23, wherein the symmetric diol amount is greater than 60 weight percent based on the total weight of polyols and the asymmetric diol amount is greater than 25 weight percent based on the total weight of polyols.

30. (previously presented): The coating composition of claim 23, wherein the symmetric diol amount is greater than about 65 weight percent based on the total weight of polyols and the asymmetric diol amount is greater than about 30 weight percent based on the total weight of polyols.

31. (previously presented): The coating composition of claim 23, wherein the symmetric diol comprises ethylene glycol, diethylene glycol, triethylene glycol, dipropylene glycol, 1,3-propanediol, neopentyl glycol, cyclohexane dimethanol, hydroxypivalyl hydroxypivalate, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, or combination thereof.

32. (currently amended): ~~The coating~~ A coating composition of claim 23, comprising:
a binder, wherein the binder comprises a polyester resin that is formed using at least one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an amount greater than 50 weight percent based on the total weight of polyols and at least one asymmetric diol in an amount greater than 20 weight percent based on the total weight of polyols, and optionally a crosslinker, wherein the polyester resin comprises between 50 and 75 weight percent isophthalic acid based on the total weight of binder and wherein the coating composition is storage stable, has a glass transition temperature of at least about 35 °C and when applied to a coil and hardened will have a flexibility of at least 1T with no tape off, and
wherein the symmetric diol includes both 1,3-propanediol and neopentyl glycol.

33. (previously presented): The coating composition of claim 23, wherein the asymmetric diol comprises 1,2-propylene glycol, 2-methyl-1,3-propanediol, 2-butyl-2-ethyl-1,3-propanediol, 1,2-butanediol, 1,3-butanediol, 1,2-pentanediol, 1,3-pentanediol, 1,4-pentanediol, 2,2-dimethyl-1,3-hexanediol, 2-methyl-2,4-pentanediol, 2,2,4-trimethyl-1-3-pentanediol, or combination thereof.

34. (currently amended): ~~The coating~~ A coating composition of claim 23, comprising:
a binder, wherein the binder comprises a polyester resin that is formed using at least
one aromatic dicarboxylic acid and using polyols comprising at least one symmetric diol in an
amount greater than 50 weight percent based on the total weight of polyols and at least one
asymmetric diol in an amount greater than 20 weight percent based on the total weight of
polyols, and optionally a crosslinker, wherein the polyester resin comprises between 50 and 75
weight percent isophthalic acid based on the total weight of binder and wherein the coating
composition is storage stable, has a glass transition temperature of at least about 35 °C and
when applied to a coil and hardened will have a flexibility of at least 1T with no tape off, and
wherein the asymmetric diol comprises 2-methyl-1,3-propanediol.
35. (currently amended): The coating composition of ~~claim 23~~ claim 34, wherein the polyester resin comprises between about ~~20 and 45~~ 15 and 40 weight percent 1,3-propanediol, between about ~~45 and 40~~ 20 and 45 weight percent 2-methyl-1,3-propanediol, and between about 25 and 50 weight percent neopentyl glycol based on the total weight of polyols.
36. (previously presented): The coating composition of claim 23, wherein the binder further comprises a crosslinking agent.
37. (previously presented): The coating composition of claim 33, wherein the crosslinking agent comprises a melamine formaldehyde resin.